

WHAT IS CLAIMED IS:

1. A liquid filter/heat exchanger unit comprising:

- a liquid filter comprising a filter element arranged a filter housing to divide an unfiltered liquid area from a filtered liquid area;
- a heat exchanger having an inlet and an outlet for a liquid; said outlet communicating with the unfiltered liquid area of the liquid filter;
- a heat exchanger bypass which connects the inlet of the heat exchanger directly to the unfiltered liquid area of the liquid filter; and
- a switching element for controlling liquid flow through said bypass;

wherein said switching element comprises a bimetal element which permits liquid flow through said bypass at temperatures at or below a switching temperature and blocks liquid flow through said bypass at temperatures above said switching temperature.

2. A liquid filter/heat exchanger unit according to claim 1, wherein the bimetal element is arranged where the bypass is connected to the inlet of the heat exchanger.

3. A liquid filter/heat exchanger unit according to claim 1, wherein the bimetal element is mounted on the heat exchanger.

4. A liquid filter/heat exchanger unit according to claim 3, wherein the bimetal element is disposed in a base plate of the heat exchanger.

5. A liquid filter/heat exchanger unit according to claim 1, wherein said inlet comprises an inlet channel which communicates directly with the bypass and with the heat exchanger.

6. A liquid filter/heat exchanger unit according to claim 5, wherein said inlet channel is provided in the filter housing.

7. A liquid filter/heat exchanger unit according to claim 1, further comprising a baffle plate arranged upstream of the bimetal element.

8. A liquid filter/heat exchanger unit according to claim 1, wherein said inlet and said filtered liquid area are connected to a lubricating oil circuit of an internal combustion engine.

9. A method of filtering motor oil from an internal combustion engine comprising passing oil from the engine successively through a heat exchanger to cool the oil and then through a filter to filter the oil and thereafter returning filtered oil to the engine, wherein at a switching temperature below normal operating temperature of the engine, a bypass is opened and at least a portion of the oil is diverted around the heat exchanger directly to the filter; and wherein the opening of the bypass is effected by a bimetal switching element.

10. A method according to claim 9, wherein said switching temperature is in the range from about 40°C to about 80°C.

11. A method according to claim 9, wherein all of the oil is diverted around the heat exchanger at or below said switching temperature.

12. A method according to claim 11, wherein flow of oil through the heat exchanger is blocked at temperatures at or below said switching temperature.

13. A method according to claim 12, wherein the flow of oil through the heat exchanger is blocked by a second bimetal switching element.